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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,950	12/18/2001	Harri Korpela	39700-528C01US/NC15271US	5366

64046

7590

02/26/2010

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EXAMINER

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ART UNIT

PAPER NUMBER

2473

MAIL DATE

DELIVERY MODE

02/26/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HARRI KORPELA, JUKKA NURMINEN,
and JYRKI AKKANEN

Appeal 2009-005946
Application 10/028,950¹
Technology Center 2400

Decided: February 26, 2010

Before JOHN C. MARTIN, ROBERT E. NAPPI,
and MARC S. HOFF, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The real party in interest is Nokia Corporation.

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 21-47. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Appellants' invention concerns an arrangement and a method to form a communication network, wherein the arrangement is divided into several modules where each module represents a layer of the network associated with a specific technology. Each module uses resources of the module adjacent to it, wherein intermediate modules are not bypassed (Abstract, Spec. 2:1-15).

Claim 21 is exemplary:

21. A method, comprising:
 - providing a plurality of selected modules;
 - configuring the selected modules to correspond to technical solutions usable in network layers;
 - connecting the selected modules hierarchically to form a hierarchic layered structure;
 - configuring the selected modules to provide resources to adjacent modules in the hierarchic layered structure;
 - configuring the selected modules substitutably;
 - modeling a network based on the selected modules; and
 - providing a comparison of different technical solutions to a user based on the modeling.

There is no prior art relied upon by the Examiner in rejecting the claims on appeal.

The Examiner rejected claims 30-47 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

The Examiner rejected claims 21-47 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 21-47 stand rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Appeal Brief (filed January 7, 2008), the Reply Brief (filed May 5, 2008), and the Examiner's Answer (mailed March 5, 2008) for their respective details.

ISSUES

Appellants contend one of ordinary skill in the art would recognize that Appellant's disclosed "arrangement" could be referred to as a "network modeling tool" (App. Br. 12). Appellants contend that one of ordinary skill in the art would understand that "technical solutions" refers to technological resolutions to problems, and would, therefore, understand the metes and bounds of the invention (App. Br. 15-16). Appellants contend that "providing a comparison of different technical solutions to a user based on the modeling" "refers to the presentation of, for example, a respective 'rough picture of the transmission needs' or a respective 'more detailed picture' of the impact on network formation presented by respective technical solutions, and would, therefore, understand the metes and bounds of the invention" (App. Br. 16). Appellants contend that providing a comparison is a practical application (App. Br. 17).

The Examiner finds that the Specification does not disclose "a network modeling tool" that performs the functions stated in the claim

limitations (Ans. 3). The Examiner finds that the Specification only discloses a manual process to perform the claimed invention by using an arrangement or method (Ans. 4). The Examiner finds that the terms “technical solutions” and “providing a comparison of different technical solutions to a user based on the modeling” are vague, indefinite, and too broad (Ans. 4). The Examiner finds that the claimed invention is directed to non-statutory subject matter because the claimed invention of “providing a comparison” of a value to a user is not limited to a practical application (Ans. 4).

Appellants’ contentions present us with the following three issues:

1. Did the Examiner err in finding that the Specification does not disclose “a network modeling tool”?
2. Did the Examiner err in finding that the terms “technical solutions” and “providing a comparison of different technical solutions to a user based on the modeling” are vague, indefinite, and too broad?
3. Did the Examiner err in holding that the claimed invention is directed to non-statutory subject matter?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

The Invention

1. According to Appellants, the invention concerns an arrangement and a method to form a communication network, wherein the arrangement is divided into several modules where each module represents a layer of the network associated with a specific technology. Each module

uses resources of the module adjacent to it, wherein intermediate modules are not bypassed (Abstract, Spec. 2:1-15).

2. In an effort to be compatible with complex communication networks, the arrangement comprises several modules, wherein each module represents a specific layer that perform certain tasks of the communication network (Spec. 2:27-30).

3. The layers correspond to different technical solutions. A technical definition dictates what layers are needed. For example, the use of ATM with inverse multiplexing over PDH radio links dictates that an ATM and PDH module should be used in the technical solution, wherein the modules represent different layers of the network. Accordingly, another example shows that modeling the interswitch traffic over SDH transport links dictates that a ISW (interswitching), a VC-4, a line system, and conduit modules will be used in the technical solution (*ATM, PDH, SDH, and VC-4 are all undefined acronyms*) (Spec. 3:1-8).

4. A significant advantage of the arrangement is that the user can select which modules he wants to use and create all kinds of transport stacks. It is also possible to separate traffic between two modules. It is also possible to combine traffic from different sources to the same network. The user can control the network level in detail; for example, the user can route the logical connections to the transport module to get a rough picture of the transmission needs. For a more detailed picture, the user can use all layers shown in FIG. 1. The user can study the different technical solutions (Spec. 5:24-6:4).

PRINCIPLES OF LAW

Under the written description requirement of 35 U.S.C. § 112, the disclosure of the application relied upon must reasonably convey to one of ordinary skill in the art that, as of the filing date of the application, the inventor had possession of the later-claimed subject matter. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991). "One shows that one is 'in possession' of *the invention* by describing *the invention*, with all its claimed limitations, not that which makes it obvious." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (emphasis in original).

Although "the meaning of terms, phrases, or diagrams in a disclosure is to be explained or interpreted from the vantage point of one skilled in the art, all the limitations must appear in the specification." *Id.* The specification need not describe the claimed subject matter in exactly the same terms as used in the claims, but it must contain an equivalent description of the claimed subject matter. *Id.*

The test for definiteness under 35 U.S.C. § 112, second paragraph, is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted). Claims must "particularly point out and distinctly claim the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, ¶ 2. However, "[o]nly claims not amenable to construction or insolubly ambiguous are indefinite....A claim term is not indefinite just because it poses a difficult issue of claim construction." *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1371 (Fed. Cir. 2008) (internal citations and quotation marks omitted). "Thus, the definiteness of

claim terms depends on whether those terms can be given any reasonable meaning.” *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005).

Under § 101, there are four categories of subject matter that are eligible for patent protection: (1) processes; (2) machines; (3) manufactures; and (4) compositions of matter. 35 U.S.C. § 101. But even if a claim fits within one or more of the statutory categories, it may not be patent eligible. *In re Ferguson*, 558 F.3d 1359, 1363 (Fed. Cir. 2009).

“[A]n applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article” into a different state or thing. *In re Bilski*, 545 F.3d 943, 961 (Fed. Cir. 2008) (en banc), *cert. granted*, 77 U.S.L.W. 3442, 3653, 3656 (U.S. June 1, 2009) (No. 08-964); *see also Gottschalk v. Benson*, 409 U.S. 63, 70 (1972).

“[A] machine is a concrete thing, consisting of parts, or of certain devices and combination of devices. This includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result.” *Ferguson*, 558 F.3d at 1364 (quoting *In re Nuijten*, 500 F.3d 1346, 1355 (Fed. Cir. 2007), *reh’g denied en banc*, 515 F.3d 1361 (Fed. Cir. 2008), and *cert. denied*, 129 S. Ct. 70 (2008)).

ANALYSIS

35 U.S.C. § 112, first paragraph rejection of claims 30-47

Independent claims 30 and 39 both recite “[a] network modeling tool.”

Appellants contend one of ordinary skill in the art would recognize that the disclosed "arrangement" could be referred to as a "network modeling tool," particularly in light of the disclosure in the Specification that various modules are included in the implementation of the invention (App. Br. 12). Appellants contend that they are entitled to rely on the understanding of one of ordinary skill in the art, who would have understood that the disclosed "arrangement" includes a general purpose computer programmed to execute software modules or an application specific integrated circuit (ASIC) having a modular design, in view of the remaining disclosure in the application (App. Br. 13). Appellants contend that there is no requirement that the precise language used in the claims must also appear in the Specification (App. Br. 13). Appellants contend further that the invention is not a single manual process (App. Br. 14). Appellants contend that the fact that "software tool" is not in the Specification is not legally significant (App. Br. 15).

The Examiner finds that the Specification does not disclose "a network modeling tool" or software that performs the functions stated in the claim limitations (Ans. 3). The Examiner finds that the Specification only discloses a manual process to perform the claimed invention by using an arrangement or method (Ans. 4).

We are not persuaded by Appellants' arguments. We do not agree with the Appellants' contention that one of ordinary skill in the art would have understood the disclosed "arrangement" to include a general purpose computer programmed to execute software modules or an ASIC having a modular design, since the Specification is *silent* as to (1) software, in general, (2) an ASIC, (3) a general purpose computer programmed to

execute software modules, or (4) what type of software (algorithm or logic) is used for these software modules. We agree with the Examiner's finding that the Specification does not disclose "a network modeling tool" that performs the functions stated in the claim limitations (Ans. 3).

We therefore find no error in the Examiner's rejection of claim 30-47 under 35 U.S.C. § 112 first paragraph.

35 U.S.C. § 112, second paragraph rejection of claims 21-47

Independent claims 21, 30, and 39 recite "technical solutions." Independent claims 21 and 30 recites "providing a comparison of different technical solutions to a user based on the modeling." Similarly, independent claim 39 recites "an output element configured to provide a comparison of the different technical solutions to user based on a result of the modeling element."

Appellants contend that one of ordinary skill in the art would understand that "technical solutions" refers to technological resolutions to problems, and would, therefore, understand the metes and bounds of the invention (App. Br. 15-16). Appellants contend that "providing a comparison of different technical solutions to a user based on the modeling" "refers to the presentation of, for example, a respective 'rough picture of the transmission needs' or a respective 'more detailed picture' of the impact on network formation presented by respective technical solutions, and would, therefore, understand the metes and bounds of the invention" (App. Br. 16).

The Examiner finds that the terms "technical solutions" and "providing a comparison of different technical solutions to a user based on the modeling" are vague, indefinite, and too broad (Ans. 4).

We agree with the Examiner that the terms “technical solutions” and “providing a comparison of different technical solutions to a user based on the modeling” are vague, indefinite, and too broad. The definitions of the words “technical” and “solutions” given by Appellants do not clarify or particularly point out what subject matter Appellants are distinctly claiming as their invention. With respect to the “providing” clause, we have reviewed the portion of the Specification cited by Appellants. While we find that this section discloses the advantages of the arrangement (FF 4), we further find that the expressed advantages are sufficiently vague that we cannot determine the metes and bounds of the invention.

We therefore find no error in the Examiner’s rejection of claims 21-47 under § 112, second paragraph.

Section 101 Rejection of Claims 21-29

Appellants contend that the Examiner erred in that the Examiner should have been seeking to determine whether the utility requirement had been met, not whether the invention is “limited to a practical application” (App. Br. 18). Appellants contend that providing a comparison is a practical application (App. Br. 17). Appellants contend that a tool is not an abstract idea “because the provision of information to a user is a real-world interaction that has real-world value” (App. Br. 18).

The Examiner finds that the claimed invention is directed to non-statutory subject matter because the claimed invention of “providing a comparison” of a value to a user is not limited to a practical application (Ans. 4).

“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement

thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. “[N]o patent is available for a discovery, however useful, novel, and nonobvious, unless it falls within one of the express categories of patentable subject matter of 35 U.S.C. § 101” *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 483 (1974).

A process is “an act, or a series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing.” *Cochrane v. Deener*, 94 U.S. 780, 788 (1877). “Transformation and reduction of an article “to a different state or thing” is the clue to the patentability of a process claim that does not include particular machines.” *Diamond v. Diehr*, 450 U.S. 175, 184 (1981) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972)).

Since independent claim 21 recites “a method comprising . . . providing a comparison of different technical solutions to a user based on the modeling,” it would fall into the statutory category of “process.”

Our reviewing court recently held that the “useful, concrete and tangible result” inquiry, first set forth in *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994) (en banc), is inadequate to determine whether a claim is patent-eligible under 35 U.S.C. § 101. See *In re Bilski*, 545 F.3d 943, 959-60 (Fed. Cir. 2008) (en banc). The Supreme Court’s “machine-or-transformation test, properly applied, is the governing test for determining patent eligibility of a process under § 101.” *Id.* at 956. “A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.” *Id.* at 954.

Appellants do not appear to argue that the method of claims 21-29 is tied to a particular machine or apparatus. Claim 21 also fails the second branch of the “machine-or-transformation” test, since the claim does not contain or require an *article* that is transformed and reduced “to a different state or thing.” *See Diamond v. Diehr*, 450 U.S. at 184.

We therefore find no error in the Examiner’s rejection of claims 21-29.

Section 101 Rejection of Claims 30-38

“[A] machine is a concrete thing, consisting of parts, or of certain devices and combination of devices. This includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result.” *Ferguson*, 558 F.3d at 1364 (quoting *In re Nuijten*, 500 F.3d 1346, 1355 (Fed. Cir. 2007), *reh’g denied en banc*, 515 F.3d 1361 (Fed. Cir. 2008), and *cert. denied*, 129 S. Ct. 70 (2008)).

Computer programs and data structures are deemed “functional descriptive material,” which impart functionality when employed as a computer component. When functional descriptive material is recorded on some (*tangible*) computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. *Compare In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) with *In re Warmerdam*, 33 F.3d 1354, 1361-62 (Fed. Cir. 1994) (claim to computer having a specific data structure stored in memory held statutory product-by-process claim but claim to a data structure that referred to ideas reflected in nonstatutory process rather than

referring to a physical arrangement of the contents of a memory held nonstatutory).

Since independent claim 30 recites “a network modeling tool, comprising ... output means for providing a comparison of the different technical solutions to a user based on the modeling,” it would appear that the claims fall into the category of “machine” for statutory subject matter.

As noted *supra*, however, with regard to the 35 U.S.C. § 112, first paragraph rejection of claims 30-47, we do not agree with the Appellants’ contention that one of ordinary skill in the art would have understood the disclosed “arrangement” substituted for by the “network modeling tool” would include a general purpose computer programmed to execute software modules or an ASIC having a modular design, since the Specification is *silent* as to (1) software, in general, (2) an ASIC, (3) a general purpose computer programmed that executes software modules, or (4) what type of software (algorithm or logic) is used for these software modules.

More particularly, with regard to the “means plus function” language of claim 30, a presumption arises that Appellants used the term “means” in claim 30 to invoke 35 U.S.C. § 112, sixth paragraph. After a review of claim 30, we find that claim 30 does not recite any structure that would perform the “providing a comparison of the different technical solutions to a user based on the modeling” function in its entirety. As such, the presumption that § 112, sixth paragraph, applies is not rebutted by any structure recited in the claim.

Our rules require that the Appeal Brief contain:

For each independent claim involved in the appeal and for each dependent claim argued separately under the provisions of paragraph (c)(1)(vii) of this section, every means plus function

and step plus function as permitted by 35 U.S.C. § 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference character.

37 C.F.R. § 41.37(c)(1)(v). Thus, we consult Appellants' Summary of the Claimed Subject Matter in the Appeal Brief to assess whether the Specification describes structure, material, or acts corresponding to the functions recited in claim 30.

Appellants fail to identify the "output means." Further, Appellants cite to page 7, lines 3-4 and FIGS. 2a and 2b of their Specification, as describing the function "for providing a comparison of the different technical solutions to a user based on the modeling" (App. Br. 8)

When we look to the Specification to find the corresponding structure, material or acts for performing the "providing" function of the "output means" limitation, we find (1) SITES A, B, and C which are all drawn as *empty* boxes in FIG. 2a and (2) SITES A, B, and C which are all drawn as *empty* boxes including interconnected *empty* boxes that have a "T" or "D" designation (*undefined acronyms*) in FIG. 2b. The Specification merely states that:

"Figures 2a and 2b show more detailed examples of conduit and line systems layers. The numbers beside the conduits (21) tell the number of fibres (sic) in the conduits. Figure 2b depicts equipment types in the sites and line systems used. 1 *STM-16 takes 2 fibers in the representing conduit in the conduit layer."

(Spec. 4:5-9). We find that the aforementioned Figures and citation to Appellants' Specification do not describe, with particularity, sufficient

structure, material, or acts for performing the "providing" limitation of independent claim 30.

Accordingly, claim 30 fails to meet the definition of a "machine" within the categories of statutory subject matter, since there is no "concrete thing, consisting of parts, or of certain devices and combination of devices."

Since Appellants have not persuaded us of error in the Examiner's rejection, we sustain the Examiner's rejection of independent claim 30 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter, as well as that of dependent claims 31-38.

Section 101 Rejection of Claims 39-47

Claim 39 recites a network modeling tool having "an output element configured to provide a comparison of the different technical solutions to a user based on a result of the modeling element."

Similar to claim 30 *supra*, Appellants cite the same portion of the Specification, page 7, lines 3-4 and FIGS. 2a and 2b, to describe the "output element configured to provide a comparison of the different technical solutions to a user based on a result of the modeling element" in Appellants' Summary of the Claimed Subject Matter in the Appeal Brief.

We find that the aforementioned figures and citation to Appellants' Specification do not describe a "concrete thing, consisting of parts, or of certain devices and combination of devices." Accordingly, claim 39 fails to meet the definition of a "machine" within the categories of statutory subject matter.

Since Appellants have not persuaded us of error in the Examiner's rejection, we sustain the Examiner's rejection of independent claim 39 under

35 U.S.C. § 101 as being directed to nonstatutory subject matter, as well as that of dependent claims 40-47.

CONCLUSIONS OF LAW

Appellants have not persuaded us that the Examiner erred in finding that the Specification does not disclose “a network modeling tool”.

Appellants have not persuaded us that the Examiner erred in finding that the terms “technical solutions” and “providing a comparison of different technical solutions to a user based on the modeling” are vague, indefinite, and too broad.

Appellants have not persuaded us that the Examiner erred in holding that the claimed invention is directed to non-statutory subject matter.

ORDER

The Examiner’s rejection of claims 21-47 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

Appeal 2009-005946
Application 10/028,950

AFFIRMED

ELD

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